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Mother's Day tribute: Remembering mom of baby 'Trinity'

By the [National Security Research Center](#) staff

For Elizabeth “Diz” Graves, the summer months of 1945 were a symbolic intersection of her personal and professional lives.

As a physicist with the then-secret lab in Los Alamos, Elizabeth participated in the [Trinity test](#) — the successful detonation of the world’s first nuclear weapon, which took place in the remote New Mexico desert on July 16, 1945.

Her role was to observe the explosion that advanced science into the Atomic Age, according to records in the National Security Research Center (NSRC). This is the Lab’s classified library, which also houses unclassified legacy materials.

And, Elizabeth was seven months pregnant.

In a cabin approximately 35 miles east of the Trinity test site, the first-time-mother-to-be worked alongside her husband and fellow physicist, Alvin Graves. They listened to scientist Sam Allison on the radio: “Three, two, one . . .,” saw the unmistakable success of the Gadget, and then monitored the fallout with survey meters.

Not long after, Graves gave birth to Marilyn, though the baby girl was nicknamed “Trinity.”

Starting a career and a family

Elizabeth earned her Ph.D. in physics in 1940 from the University of Chicago, where she met and married Alvin. He was recruited to work for the Manhattan Project — the U.S. government’s effort to create the atomic bombs and help end World War II — but Alvin would not accept the job unless Elizabeth was also offered a position, according to *Their Day in the Sun: Women of the Manhattan Project*.

“She’s a better physicist than I am,” Alvin later said, according to his obituary in *The New York Times*.

The couple arrived in Los Alamos in early 1943.

Elizabeth was known to be smart, funny, a hard worker and maternal, even before the couple were parents to their three children. During WWII, Elizabeth opened her home to military members stationed at Los Alamos as temporary living quarters until dormitories were built.

“She was most outstanding in that she managed to combine successfully a career in physics and raising a family,” a friend said in a 1972 article in the *Los Alamos Monitor*.

The Graves would stay at the Lab for their entire careers, with Elizabeth eventually becoming a Group Leader in experimental physics and Alvin ultimately leading the Field Testing Division for 17 years.

When Alvin preceded her in death in 1965, Elizabeth found solace in her work, said John Hopkins, who worked at the Lab as a nuclear physicist for 34 years and eventually held the same Field Testing Division position as Alvin.

“Diz threw herself completely into research,” Hopkins said. “When I commented about her long hours and dedication, she responded that when there was nothing at home she might as well go to the Lab.”

Elizabeth died from cancer on January 6, 1972, in an Albuquerque hospital. She was 55.

After her death, her colleagues shared memories of Elizabeth, including from one of her pregnancies: She went into labor while conducting important experiments in her laboratory, according to the Atomic Heritage Foundation. Elizabeth was able to complete her work while also monitoring her contractions with a stopwatch.

Stories and photos like Elizabeth Graves’ are part of the collections in the National Security Research Center, which is the Lab’s classified library and also houses unclassified materials from our history. [Read more](#) or [email us](#).



This photo of Elizabeth "Diz" Graves and her daughter, Marilyn, in 1959 is part of the historical collections in the Lab's National Security Research Center. Marilyn was nicknamed "Trinity" because Elizabeth, a physicist, was seven months pregnant when she witnessed the detonation of the world's first atomic bomb, known as the Trinity test.

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Notes, written at t_0 , approximately 2 hours, on visual observation of the gadget shot from Carrizozo.

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E. R. Graves

Turned on Leet meter -1 sec approx. at t_0 sky lit up white.

At $t+1$ sec may have shaken floor ducking due to being blinded.

Sky turned to brilliant red and faded in about 4 sec 12 smoke puffs blew up at about 4-5 sec. rapidly into sky — then more slowly rose fiery smoke cloud which faded to pink in several seconds.

At about 10 sec. (maybe 15) there were 2 lightning flashes, sort of white, illuminated the cloud which was rising all the time.

At 2 min 38 seconds air shock arrived—blew healthy puff in the window into our faces and simultaneously the noise arrived which rumbled (echoes?) about like a medium thunder.

A. C. Graves

Saw an extremely bright flash of dazzling white light seeming to cover the entire sky visible to me thru the window. This changed almost at once to yellow and deep red. The phase lasted several seconds. Then the sky darkened and about three rings or puffs of fiery red appeared over the mountain. These were like smoke rings. Finally a pillar of luminous reddish smoke appeared. This seemed a brighter red than the smoke rings. This all took about five seconds or more. After most of the illumination was gone and there remained only a cloud of pinkish colored smoke, there were two and probably three fairly bright flashes of light (like heat lightning) about -15 seconds.

Addendum, July 24, 1945

The radio reception of WTX, WTX2, 364 and 385 was poor due to the EBC on one side and Voice of America on the other side, both very close. Announcements were understandable, the first heard by S.F.A. being -10 sec. There was no noticeable disturbance at t_0 other than the ordinary static which was rather bad all the time. Neither A.C.G. or E.R.G. heard any extra disturbance.

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Elizabeth Graves' observations from the detonation of the first-ever atomic bomb are part of the expansive collection of Trinity test documents in the National Security Research Center. Graves noted the "sky turned to brilliant red" and that lightning flashes illuminated the rising mushroom cloud. Her husband and fellow physicist, Alvin Graves, witnessed the test alongside her. https://drive.google.com/file/d/1YBWTF-J83J8zZcf_2WGo1Hw9Xz49sGNU/view?usp=sharing



Elizabeth and Alvin Graves both worked as physicists at Los Alamos during World War II. The couple's first of three children was nicknamed "Trinity" because the baby girl was born not long after the Trinity test on July 16, 1945.

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